

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. Department of Energy
Golden Field Office**

Photovoltaic Supply Chain and Cross-Cutting Technologies

Funding Opportunity Announcement Number:

DE-PS36-09GO99003

Announcement Type: Modification 002

CFDA Number: 81.087

Issue Date: 10/21/2008

Application Due Date: 01/28/2009, 11:59 PM Eastern Time



Department of Energy

Golden Field Office

1617 Cole Boulevard

Golden, Colorado 80401-3393

DE-PS36-09G099003

Modification No. 001

DATE: November 7, 2008
FROM: Andrea K. Lucero, Contracting Officer *AKL*
TO: All Prospective Applicants

SUBJECT: Modification No. 001 to Announcement DE-PS36-09G099003,
"Photovoltaic Supply Chain and Cross-Cutting Technologies"

The Announcement is modified to clarify that all types of entities are eligible to apply, and to update the examples of Public Personally Identifiable Information (PII) that Applicants may include in the files to be evaluated by the Merit Review Committee (Appendix B - Personally Identifiable Information). Therefore;

1. Part III. **Eligibility Information**, Section A. **Eligible Applicants** is deleted and replaced with the following:

A. ELIGIBLE APPLICANTS

All types of entities, including DOE/NNSA National Laboratories, other than the National Renewable Energy Laboratory (NREL) and Sandia National Laboratory (SNL), are eligible to apply, except other Federal agencies, non-DOE Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501 (c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995. NREL and SNL are not eligible as prime applicants under this announcement since DOE already has established programs with these two laboratories. However, NREL and SNL will be allowed as sub-recipients limited to 25% of the total project cost.

2. In **Appendix B - Personally Identifiable Information**, the examples of Public PII that Applicants may include in the files to be evaluated by the Merit Review Committee is deleted and replaced with the following:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Business cards

- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a program describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

All other content of the Announcement remains unchanged.



Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

DE-PS36-09G099003
Modification No. 002

DATE: December 4, 2008
FROM: Andrea K. Lucero, Contracting Officer *AKL*
TO: All Prospective Applicants

SUBJECT: Modification No. 002 to Announcement DE-PS36-09G099003,
"Photovoltaic Supply Chain and Cross-Cutting Technologies"

The Funding Opportunity Announcement is modified to extend the due date three weeks to Wednesday, January 28, 2009. Therefore;

1. Part IV – **APPLICATION AND SUBMISSION INFORMATION**, Section C. **CONTENT AND FORM OF APPLICATION**, Paragraph E. **SUBMISSION DATES AND TIMES** is deleted and replaced with the following:

E. SUBMISSION DATES AND TIMES

Application Due Date

Applications must be received by **January 28, 2009, 11:59 PM Eastern Time**. You are encouraged to transmit your application well before the deadline. The grants.gov Helpdesk is NOT available after 9:00 PM Eastern Time. **APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

All other content of the Announcement remains unchanged.



Department of Energy

Golden Field Office

1617 Cole Boulevard

Golden, Colorado 80401-3393

DE-PS36-09G099003

Modification No. 003

DATE: December 18, 2008
FROM: Andrea K. Lucero, Contracting Officer *AKL*
TO: All Prospective Applicants

SUBJECT: Modification No. 003 to Announcement DE-PS36-09G099003,
"Photovoltaic Supply Chain and Cross-Cutting Technologies"

This announcement is modified to clarify that **Applicants must use the Solar America Initiative (SAI)-specific Solar Advisor Model (SAM) templates and the required input values for calculating Levelized Cost of Energy (LCOE). Therefore, Applicants who have already submitted an application should resubmit their application with a new LCOE analysis using these templates. Applicants who have already completed an LCOE analysis, should re-do their analysis using these templates prior to submission.** These templates have been made available under the "Program" and "Environment" sections of the SAI templates under the heading "Templates for Solar America Initiative," found at <https://www.nrel.gov/analysis/sam/download.html>.

The templates applicants are required to use are found under the heading "Templates for Solar America Initiative." Note that these templates contain modeling assumptions that are somewhat different from those in the "Standard PV Systems.sam" file that is downloaded with the Solar Advisor Model. SAI-specific templates are provided for each of the four target PV markets for the Solar America Initiative.

Therefore;

1. **PART I – FUNDING OPPORTUNITY DESCRIPTION, Special Instructions**, subpart 4. Special Application Requirements, in bullet three, the "Total Cost Reduction Analysis" explanation paragraphs, up to the point that begins, "For questions and issues not addressed by the SAM User Guide, ..." are deleted and replaced with the following:

Total Cost Reduction Analysis:

All Applicants must quantify the total cost reduction their technology will potentially provide the PV industry. Many technologies will allow a straightforward estimate in terms of \$/W cost reductions. However, other technologies primarily impacting reliability, energy yield, operation and maintenance, or any combination of these with \$/W cost reduction will be best

quantified in terms of the reduction in the LCOE. In this case, the DOE requires that this cost reduction be quantified using the Solar Advisor Model (SAM) software package which provides a platform for calculating LCOE. This modeling software can be found at: <https://www.nrel.gov/analysis/sam/download.html>. The templates applicants are required to use are found under the heading “Templates for Solar America Initiative.” Note that these templates contain modeling assumptions that are somewhat different from those in the “Standard PV Systems.sam” file that is downloaded with the Solar Advisor Model. SAI-specific templates are provided for each of the four target PV markets for the Solar America Initiative.

When using SAM, the applicant must start with the SAI templates on the SAM website above. For each of the four markets (residential, commercial, utility-scale flat-plate, and utility-scale CPV), the template values found under the "Program" and "Environment" sections of the SAM interface are required inputs for analysis under SAI and should not be changed, with the following exception: for the utility-scale flat-plate system and CPV templates, the "loan (debt) percent" should be modified or optimized to obtain the minimum LCOE.

While representative system parameters and costs are provided under the "System" area of the SAM interface, these system and cost parameters should be modified by the applicant's analyst to reflect their particular technology. If the applicant chooses to include an analysis with modifications to other data in the templates, these must be explicitly shown by including the “results” spreadsheet output from SAM (specifically, the “input” tab of this spreadsheet output (see Figure 1)). A clear discussion and justification of these modifications/assumptions should be clearly stated within the project proposal. Claims or assertions of cost reduction that are unclear, opaque, or overly optimistic may be interpreted negatively by the merit review committee. NOTE: the improvement in LCOE rather than the absolute LCOE value is the significant parameter for assessing total project impact.

All other content of the Announcement remains unchanged.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

Background

The mission of the Department of Energy (DOE)/Energy Efficiency and Renewable Energy (EERE) Solar Energy Technologies Program (SETP) is to conduct research, development, demonstration and deployment activities to accelerate widespread commercialization of clean solar energy technologies across America, diversifying the Nation's electricity supply options, while increasing national security and improving the environment. This mission is consistent with the Energy Policy Act of 2005, Section 931, DOE's Strategic Plan, and EERE's Strategic Plan.

The Solar America Initiative (SAI) was created during 2006 with several specific goals. These include achieving grid parity using photovoltaics (PV) by 2015 and scaling up domestic manufacturing capacity to supply beyond 5 GW of domestic PV installations by 2015. DOE is utilizing a multi-tiered, multi-phased strategy to address the near-, mid- and long-term technology development needs to meet these goals. The on-going approach coordinates and funds applied research and development; emphasizing the development, performance, cost, and durability of materials and components, or process improvements for increased efficiency. The overall focus continues to be proof of technology concepts, scale-up research and demonstrations, cost reductions in the various technologies and processes, and system deployment support. More general information about the SAI can be found at: http://www.eere.energy.gov/solar/solar_america/about.html. More information about the research funding strategy of SETP can be found in the Solar America Initiative Plan: http://www.eere.energy.gov/solar/solar_america/pdfs/sai_draft_plan_feb5_07.pdf.

Increasing the overall PV system efficiency and lowering the total manufacturing costs are both essential for the success of the Solar America Initiative. Program activities are currently bringing emerging technologies and manufacturing processes to market. The program focus is primarily on bringing finished products to market either through the development of an improved PV module or by optimizing a full system design and installation. For example, current DOE programs such as the Technology Pathway Partnerships and PV Incubator programs are targeting manufacturing processes and module/system product developments and preliminary system deployment. These programs are successfully developing technologies, implementing economies of scale, and vertically integrating the business structure to drive down costs.

Purpose

The purpose of this Funding Opportunity Announcement (FOA) for 'Photovoltaic Supply Chain and Cross Cutting Technologies' is to identify and accelerate the development of unique products or processes that are expected to have a large impact on the industry, or a segment of the industry, in support of the overall program goals. Successful applicants to this FOA will focus on component and/or manufacturing technologies with the potential to have a near-term impact on a substantial segment of the PV industry. Near term is defined as technologies with expected market impacts evident within 2-6 years of award. Responsive applications will either 1) have a high impact on innovative evolutionary improvements that can be supplied across the industry at high volumes and lower costs than conventional technology today; or 2) propose disruptive technologies applicable to a narrow segment of the industry, which can dramatically reduce costs. If successful, either approach will drive future growth of the relevant technology or technologies.

In contrast to programs focused on improvements within specific product designs, this funding opportunity aims at cross-cutting cost reduction opportunities that provide a generic benefit across a segment of the PV industry. Past examples of such cross-cutting technologies demonstrating a broad impact on the industry include wire saws, screen printing, laser scribing, in-situ analysis, automated handling, and spray-on dopants. Each of these examples had a powerful impact on cost, not only because they improved upon the industry's existing best practices, but also because they were broadly applicable across several PV products at that time.

Currently, there exists a wealth of technologies and practices from companies outside the PV industry that are applicable to the PV industry and could be optimized for PV-specific manufacturing methods and products. Examples of future high-impact technologies may include processing steps to improve throughput, yield or diagnostics; material solutions to improve reliability or enhance optical, thermal, or electrical performance; or system components that streamline installation. The degree of improvement for these optimizations may be small in terms of a single product or processing step; however, high impact ideas will also demonstrate a significant breadth across the PV industry.

Scope

There are two Topics for submitting an application to this FOA:

TOPIC 1: Proof of Concept Technical/Feasibility Assessment (POC/FA). This type of application is to evaluate or assess an idea. The application must include pre-prototype development and testing. The maximum period of performance for Topic 1 is 12 months, and a minimum 20% cost share is required. A paper study only, that does not include testing and pre-prototype development, will not be responsive to this FOA and will NOT be considered for evaluation.

TOPIC 2: Research, Development and Demonstration (RD&D). An RD&D application will include research, evaluation, verification, testing and/or demonstration. The period of performance may be up to 36 months. A minimum 50% cost share is required.

Areas of Focus:

For either of these two Topics, several Focus Areas are possible. Focus Areas broadly group research in three general areas to encourage innovative thinking in any aspect of the supply chain needs of the PV industry. **Items listed under each Focus Area are for illustration only and do not restrict the research encouraged under this FOA.**

Three general Focus Areas for both Topics are:

Focus Area 1: PV Module

- Flexible barrier or protective coatings
- Transparent conductors
- Contacts (high aspect ratio, printed, non-silver)
- High performance glass (low emissivity, high transmission, high temp., low soiling)
- Thermal solutions (Concentrating photovoltaic (CPV) heat sinks, Infrared rejection)
- Light trapping
- Adhesives
- Test methods to evaluate module energy utilization efficiency

Focus Area 2: Non-Module PV system

- Inverter components
- Trackers
- Building integration
- Streamlined balance of system solutions
- Intelligent controls (automated metering, utility-grade metrics, interactive intelligence, adaptive logic)
- Diagnostic tools for system operation

Focus Area 3: PV Manufacturing processes and metrologies

- CPV alignment
- Material flux measurement
- Fast optical characterization
- Materials recycling
- Cell crack detection methodologies
- All aspects of cell fabrication including kerfless wafering

Each application will be assessed according to three primary metrics. These items are included in the evaluation criteria. They are re-stated and more fully described here for emphasis.

1. *Total impact of the advancement:* This is defined as the projected cost reduction, in \$/W or cents/kWh, multiplied by the projected sales volume. Therefore, an innovation promising a significant cost reduction will be tempered by the size of the market to which it is applicable. *Example: Innovation promising cost reductions of \$0.10, applicable to \$3 million in sales in the next 2-6 years will have a lesser value than a similar reduction applicable to \$30 million in sales over the same period.*
2. *Uniqueness or innovativeness of approach:* Relevant projects will develop unique technologies that contain risk sufficient to necessitate DOE funding. Responses to this FOA are not likely to be successful if they include highly evolutionary improvements or ideas already aggressively under development by incumbent PV suppliers (i.e. thinner wire saws).
3. *Likelihood of success:* The success of a project will depend on achieving cost and performance targets on time, within budget, and with a clear technology transfer plan to broadly distribute the technology advancement for maximal impact. Important considerations for this metric include both the planned risk mitigation strategies and soundness of business strategy. Applicants should identify the manufacturing process, component improvement, or other advancement targeted by their specific research efforts, and demonstrate a clear path to implementation or commercialization

Special Instructions

1. Partnerships: While not required, the project may be a partnership of two or more entities positioned to support achieving or exceeding the 2015 SAI goals.
2. Two Application Topics: There are two Topics for applications under this FOA. As noted in the 'Scope' section, both the period of performance and cost share requirements are different for each Topic.
 - Topic 1 is for a Proof of Concept Technical/Feasibility Assessment (POC/FA)

application. 20% required Cost Share.

- Topic 2 is a Research, Development and Demonstration (RD&D) application. 50% required Cost Share.

3. Focus Areas: Applications submitted under either Topic may have multiple Focus Areas.

4. Special Application Requirements: Applications must meet the following special requirements:

- The Applicant must be the lead for the project.
- The title page of the Narrative should list both the Topic and the Focus Area(s) of the Application
 - An applicant may submit multiple applications.
 - If an Applicant wishes to propose a project under both Topics, a **separate application** must be submitted for each Topic. The cost share requirement is different for each Topic, so each application must be clearly defined. An application combining both Topic 1 and Topic 2 will be considered non-responsive to the FOA and will NOT be considered. Again, the Topic and Focus Area(s) to which the applicant is applying must be clearly identified on the title page of the Narrative.
 - If the focus is an area other than those listed in the Scope section of this FOA, the Focus Area should be identified as "Other".
- All applications must clearly state how the planned effort will reduce the levelized cost of energy (LCOE) and/or increase the U.S. PV manufacturing capacity. This description should include a table of the relevant results from the "Solar Advisor Model (SAM) Analysis" (see 'Total Reduction Analysis' below).

Total Cost Reduction Analysis:

All Applicants must quantify the total cost reduction their technology will potentially provide the PV industry. Many technologies will allow a straightforward estimate in terms of \$/W cost reductions. However, other technologies primarily impacting reliability, energy yield, operation and maintenance, or any combination of these with \$/W cost reduction will be best quantified in terms of the reduction in the LCOE. In this case, the DOE requires that this cost reduction be quantified using the Solar Advisor Model (SAM) software package which provides a platform for calculating LCOE. This modeling software can be found at: <https://www.nrel.gov/analysis/sam/download.html>. The templates applicants are required to use are found under the heading "**Templates for Solar America Initiative.**" Note that these templates contain different modeling assumptions are somewhat different from those in the "Standard PV Systems.sam" file that is downloaded with the Solar Advisor Model. SAI-specific templates are provided for each of the four target PV markets for the Solar America Initiative.

When using SAM, the applicant must start with the SAI templates on the SAM website above. For each of the four markets (residential, commercial, utility-scale flat-plate, and

utility-scale CPV), the template values found under the "Program" and "Environment" sections of the SAM interface are required inputs for analysis under SAI and should not be changed, with the following exception: for the utility-scale flat-plate system and CPV templates, the "loan (debt) percent" should be modified or optimized to obtain the minimum LCOE.

While representative system parameters and costs are provided under the "System" area of the SAM interface, these system and cost parameters should be modified by the applicant's analyst to reflect their particular technology. If the applicant chooses to include an analysis with modifications to other data in the templates, these must be explicitly shown by including the "results" spreadsheet output from SAM (specifically, the "input" tab of this spreadsheet output (see Figure 1). A clear discussion and justification of these modifications/assumptions should be clearly stated within the project proposal. Claims or assertions of cost reduction that are unclear, opaque, or overly optimistic may be interpreted negatively by the merit review committee. NOTE: the improvement in LCOE rather than the absolute LCOE value is the significant parameter for assessing total project impact.

For more information about SAM, download the Solar Advisor Model User Guide for Version 2.5 (PDF 3.1 MB) at <https://www.nrel.gov/analysis/sam/download.html>.

For questions and issues not addressed by the SAM User Guide, please send an email to Solar_Advisor_Support@nrel.gov.

The spreadsheet from the analysis must be submitted as a 'Cost Reduction Analysis.xls' file as part of the application. Instructions for submitting this file can be found under "Other Attachments Form" in Part IV - Application and Submission Instructions, Section C – Content and Form of Application, of this FOA.

Figure 1 – Screenshot of the 'Input' tab for the SAM Model

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding grants and/or cooperative agreements under this program announcement. If it is determined that a cooperative agreement is the appropriate award instrument, the nature of the Federal involvement will be included in a special award condition.

If a cooperative agreement is chosen as the award instrument, the DOE will be substantially involved in directing the work performed under the resulting award, to ensure that projects in each topic area are the most beneficial to achieving the goals of the Solar Energy Technologies Program (SETP). The level of DOE involvement will be negotiated with each Recipient prior to award. Substantial involvement consists of DOE collaboration in the project, including DOE's provision of technical assistance in the form of FFRDC testing and evaluation capabilities. As part of its standard project management responsibilities, DOE will also conduct periodic technical reviews, ongoing evaluation of key performance parameters and go/no-go decisions.

B. ESTIMATED FUNDING Subject to annual Congressional Appropriations, estimated funding is approximately \$5-\$10M per year. The actual level of funding is totally dependent upon the appropriations allocated for this program when the Federal budget is finalized.

C. MAXIMUM AND MINIMUM AWARD SIZE

In addition to being limited to the maximum federal support designated above for a single project year, Recipients will be limited to a maximum amount of federal support over the full period of performance for the award, subject to annual appropriations, as follows:

	<u>Topic 1</u> : Proof of Concept/Feasibility Assessment	<u>Topic 2</u> : Research, Development and Demonstration
Max DOE Share or Range Per Award (<i>subject to annual Congressional appropriations</i>)	\$150K (Federal share) 9 to 12 months	\$300K - \$1M/yr (Federal share) 12 to 36 months

If an applicant requests funding levels higher than those indicated for each Topic, the applicants must justify the need for more funds in their application.

In order to be responsive to advancements and needs in the industry, and subject to annual Congressional appropriations, DOE anticipates conducting future FOAs approximately every 8 to 12 months to take advantage of new opportunities arising in the industry. Applicants whose projects are successful in their Topic 1 work are encouraged to apply in these future FOAs.

D. EXPECTED NUMBER OF AWARDS

DOE anticipates making 9 - 14 awards under this announcement depending on the size of the awards.

	<u>Topic 1: Proof of Concept/Feasibility Assessment</u>	<u>Topic 2: Research, Development and Demonstration</u>
Awards Expected	5 to 9	4 to 5

In order to be responsive to advancements and needs in the industry, and subject to annual Congressional appropriations, DOE anticipates conducting future FOAs approximately every 8 to 12 months to take advantage of new opportunities arising in the industry. Applicants whose projects are successful in their Topic 1 work are encouraged to apply in these future FOAs.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

All types of domestic entities, including DOE/NNSA National Laboratories, other than the National Renewable Energy Laboratory (NREL) and Sandia National Laboratory (SNL), are eligible to apply, except other Federal agencies, non-DOE Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995. NREL and SNL are not eligible as prime applicants under this announcement since DOE already has established programs with these two laboratories. However, NREL and SNL will be allowed as sub-recipients limited to 25% of the total project cost.

B. COST SHARING

Cost share for each Topic is based on total allowable costs as summarized in the table below:

	<u>Topic 1: Proof of Concept/Feasibility Assessment</u>	<u>Topic 2: Research, Development and Demonstration</u>
Minimum Cost Share requirement	20%	50%

Total project cost is the DOE share plus all non-Federal cost share. The cost share must come from non-Federal sources. (See Appendix C to this announcement and 10 CFR Part 600 for applicable cost share requirements.) **FFRDC funding is DOE funding.** Cost share contributions may be divided among the Applicant and partners, but the total proposed cost share contribution from all members of the team (Applicant + partners) must equal or exceed the stated requirements. Funds from other DOE or Federally-funded entities cannot be used as cost share. Additionally, existing patents or other existing intellectual property may not be proposed as cost share.

Applications should clearly identify the sources and amounts of cost share proposed by Budget Period, as indicated in the Cost Share section of the Budget Justification for SF 424A Budget (form PMC 123.1).

NOTE: All federal project funds and 85% of the required cost share funds will be required to be spent within the United States.

C. OTHER ELIGIBILITY REQUIREMENTS

DOE National Laboratory Contractors and Federally Funded Research and Development Center (FFRDC) Contractors

1. A DOE National Laboratory Contractor, other than the National Renewable Energy Laboratory (NREL) and Sandia National Laboratory (SNL), is eligible to apply for funding under this announcement if its cognizant contracting officer provides written authorization and this authorization is submitted with the application. If a DOE National Laboratory Contractor is selected for award, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's M&O contract. The following wording is acceptable for the authorization:

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory and will not adversely impact execution of the DOE assigned programs at the laboratory."

2. FFRDC contractors, **including NREL AND SNL**, may be proposed as team members on another entity's application, subject to the following guidelines:

FFRDC Contractor Effort:

If the FFRDC contractor is NOT the applicant, the FFRDC contractor effort, in aggregate, **shall not exceed 25% of the total estimated cost of the project**, including the applicant's and the FFRDC contractor's portions of the effort.

Authorization for non-DOE FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award.

Authorization for DOE FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE FFRDC contractor on the proposed project and this authorization must be submitted with the application. The following wording is acceptable for this authorization.

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory, will not adversely impact execution of the DOE assigned programs at the laboratory."

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a

DOE FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the FFRDC contractor.

D. MULTIPLE PRINCIPAL INVESTIGATORS

Multiple Principal Investigators (PIs) in projects awarded under this FOA are allowed. The applicant, whether a single organization or team/partnership/ consortium, however, must indicate in the application if the project will include multiple PI's. The decision to use multiple PIs for a project is the sole responsibility of the applicant.

If multiple PI's will be designated, the application MUST identify the Contact PI/Project Coordinator. The Narrative should include a discussion on coordination and management, describing the organizational structure of the project as it pertains to the designation of multiple PI's. At a minimum, this should include:

- Process for making decisions on scientific/technical direction
- Communication plans
- Procedures for resolving conflicts; and
- PI's roles and administrative, technical and scientific responsibilities for the project

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select "Apply for Grants," and then select "Download Application Package." Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent

A Letter of Intent is not required.

2 Pre-application

A pre-application is not required.

C. CONTENT AND FORM OF APPLICATION

You must complete the mandatory forms and any applicable optional forms, in accordance with the instructions on the forms and the additional instructions below, as required by this

FOA. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

SF 424 - Application for Federal Assistance

Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form. **To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form.)** In Block 15, “Descriptive Title of Applicant’s Project”, also indicate the Topic and Focus area(s) to which you are applying. The list of certifications and assurances referenced in Field 21 can be found at http://management.energy.gov/business_doe/business_forms.htm, under Certifications and Assurances.

Other Attachments Form

Submit the following files with your application and attach them to the Other Attachments Form. Click on “Add Mandatory Other Attachment” to attach the Project Narrative. Click on “Add Optional Other Attachment,” to attach the other files.

a. Project Narrative File - Mandatory Other Attachment

The project narrative for Topic 1 must not exceed 15 pages. The project narrative for Topic 2 must not exceed 20 pages. This includes the cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right). EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED FOR THE PROJECT NARRATIVE FILE.

The font must not be smaller than 11 point.

Do not include any Internet addresses (URLs) that provide information necessary to review the application.

See Part VIII.D for instructions on how to mark proprietary application information. Save the information in a single file named “Project.pdf,” and click on “Add Mandatory Other Attachment” to attach. **Do not include any Personally Identifiable Information as defined in Appendix B.**

The project narrative must include:

- Topic and Focus Area(s) Project Objectives.
This section should identify the Topic and Focus Area(s) and provide a clear, concise statement of the specific objectives/aims of the proposed project.
- Merit Review Criterion Discussion.
This section should be formatted to address each of the merit review criterion and sub-criterion listed below and in Part V. A. Provide sufficient information so reviewers will be able to evaluate the application in accordance with these merit review criteria. Applications to Topic 1 should respond to the Topic 1 evaluation criteria and applications responding to Topic 2 should respond to the Topic 2 evaluation criteria.

DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT SEPARATELY ADDRESS EACH OF THE MERIT REVIEW CRITERION AND SUB-CRITERION. It is HIGHLY recommended that the Project Narrative have sections labeled as follows:

TOPIC 1: PROOF OF CONCEPT/ FEASIBILITY ASSESSMENT CRITERIA	
Criterion 1: Statement of Project Objectives	
	Weight: 40%
Technical Merit:	Present a thorough description of the technology and the steps to achieve the technical objective with a feasible near-term impact (2-6 years). Support the technical project description with a clear explanation of current industry best practices. Describe the potential future limitations the project will address or resolve.
Impact and Relevance:	Forecast the impact of the the technology and substantiate the impact with projected \$/W or LCOE reductions. Describe the breadth of the impact the technology would have on the industry or a sector of the industry.
Feasibility:	Identify critical success factors and the discuss the likelihood of achieving them.
Uniqueness or innovation:	Discuss the proposed technology relative to the current state of the art
Criterion 2: Technical Approach, Realism and Project Management Plan	
	Weight: 40%
Clear Objectives:	Discuss the project objectives and the technical or cost issues in the industry the project will specifically address. Discuss the project risks and define mitigation strategies.
Organization:	Discuss the project planning and organization. Present a task plan that adequately and completely addresses all elements of the technical plan. Describe the project tasks, including the approach to achieving the cost and performance targets on time and within budget.
Verification:	Describe the testing and evaluation plan and identify the specific objectives for the tests.
Decision Points and Deliverables:	Identify key milestones, decision points and deliverables. Include technology transfer and commercialization decision points.
Criterion 3: Qualifications, Resources and Approach to Commercialization	
	Weight: 20%
Relevant Experience:	Present the experiences, qualifications, and credentials of Team Members.
Facilities:	Describe the facilities and supporting resources of the Applicant (and Team Members, if applicable) that are available for the project.
Commitment:	If applicable, provide letters of commitment for each Team Member's participation and/or cost share.
Technology Transfer:	Discuss plans for commercialization or technology transfer.

TOPIC 2: RESEARCH AND DEVELOPMENT AND DEMONSTRATION PROJECTS	
Criterion 1: Statement of Project Objectives	
Weight: 40%	
Technical Merit:	Present a thorough description of the technology and the steps to achieve the technical objective with a feasible near-term impact (2-6 years). Support the technical project description with a clear explanation of current industry best practices. Describe the future limitations the project will address or resolve.
Impact and Relevance:	Forecast the impact of the technology and substantiate the impact with projected \$/W or LCOE reductions. Describe the breadth of the impact the technology would have on the industry or a sector of the industry.
Feasibility:	Identify critical success factors and discuss the likelihood of achieving them.
Uniqueness or innovation:	Discuss the proposed technology relative to the current state of the art.
Criterion 2: Technical Approach, Realism and Project Management Plan	
Weight: 40%	
Clear Objectives:	Discuss the project objectives and the technical or cost issues in the industry that the project will specifically address. Discuss the project risks and define mitigation strategies.
Organization:	Discuss the project planning and organization. Present a task plan that adequately and completely addresses all elements of the technical plan. Describe the project tasks, including the approach to achieving the cost and performance targets on time and within budget.
Verification:	Describe the testing and evaluation plans and identify the specific objectives for the tests.
Decision Points and Deliverables:	Identify key milestones, decision points and deliverables. Include technology transfer and commercialization decision points.
Business Strategy:	Discuss the strategy for advancing the technology, reducing the project to practice, and implementing the technology in the industry.
Criterion 3: Qualifications, Resources and Approach to Commercialization	
Weight: 20%	
Relevant Experience:	Present the experiences, qualifications, and credentials of Team Members.
Facilities:	Describe the facilities and supporting resources of the Applicant (and Team Members, if applicable) that are available for the project.
Commitment:	If applicable, provide letters of commitment for each Team Member's participation and/or cost share.
Strategic Position:	Describe the path capabilities of the team to successfully deploy the technology. Provide examples of previous or current experience, partners, or other supporting information.

- Project Timetable and Review Schedule:
This section should outline as a function of time, **month-by-month for Topic 1 and year-by-year for Topic 2**, all the important activities or phases of the project, including any activities planned beyond the project period. Successful applicants must use this project timetable to report progress. Topic 1 projects should identify a quantifiable 12-month milestone. This is especially important if an application for future DOE funding for continuing work is anticipated. Topic 2 projects must schedule decision points or critical review criteria with associated deliverables schedules no less frequently than every 12 months.

- Project Performance Site:

Indicate the primary site where the work will be performed. If a portion of the work will be performed at any other sites, also identify those sites.

The above listed components of your Project Narrative must be within the Narrative page limit specified above for each Topic. Documents listed below must be separate files and do not count toward the Project Narrative page limit. Note that some of the required documents listed below may have their own page limits.

b. Project Summary/Abstract File

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the Topic and Focus Area(s), the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). **This document must not include any proprietary or sensitive business information or the names of potential sub-recipients as DOE may make it available to the public.** The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) with font not smaller than 11 point. Save this information in a file named "Summary.pdf," and click on "Add Optional Other Attachment" to attach. **Do not include any proprietary or Personally Identifiable Information as defined in Appendix B.**

c. Resume File

Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Of the key personnel identified in this file, indicate the Principal Investigator(s) (PI). If multiple PI's are proposed, the applicant must provide the information indicated in Part III, Section D. as part of this file.

Save all resumes in a single file named "resume.pdf" and click on "Add Optional Other Attachment" to attach. Each resume must not exceed 2 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and should include the following information, if applicable:

Education and Training. Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.

Professional Experience: Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications. Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically. Patents, copyrights and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

d. Total Cost Reduction Analysis File

All Applicants must quantify the total cost reduction their technology will potentially provide the PV industry. Cost reduction should be quantified using the Solar Advisor Model (SAM) software package, which provides a platform for calculating LCOE. This modeling software can be found at:

<https://www.nrel.gov/analysis/sam/download.html>.

The spreadsheet from the analysis should be saved as a file named "Cost Reduction Analysis.xls". Click on "Add Optional Other Attachment" to attach.

e. Budget File

SF 424 A Excel, Budget Information – Non-Construction Programs File

You must provide a separate budget for each year of support requested and a cumulative budget for the total project period (see Appendix D for a sample cumulative budget). Use the SF 424 A Excel, "Budget Information – Non Construction Programs" form on the Applicant and Recipient Page at <http://management.energy.gov/documents/SF424Aexcel.xls>. You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G). **All budget categories must include both the DOE and Applicant or third-party cost share, if applicable.** Save the information in a single file named "SF424A.xls," and click on "Add Optional Other Attachment" to attach.

f. Budget Justification File

A Budget Justification for SF 424A must be provided for the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support

your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates as part of the budget justification or under the comments under the Indirect tab of the Budget Justification form

The Excel format provided as PMC 123.1, Budget Justification for SF 424A, at <https://www.eere-pmc.energy.gov/forms.aspx>, is required for use in providing this budget justification. **All budget categories in the budget justification must include both the DOE and Applicant or third-party cost share, if applicable.**

g. Letters of Commitment

Provide a letter from each third party contributing any amount of cost sharing (i.e., a party other than the organization submitting the application). **All Letters of Commitment must be attached to the Project Narrative File.** The letter must state that each party is committed to providing a specific minimum dollar amount of cost sharing. In the PMC 123.1 Budget Justification form, identify the following information for each third party contributing cost sharing: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed cost sharing – cash, services, or property. Letters of Commitment from parties participating in the project, exclusive of vendors, who will not be contributing cost share, but will be integral to the success of the project must be included as part of this Appendix to the Narrative. Letters of Commitment will not count towards the Project Narrative page limit.

h. Subaward Budget File(s)

A separate budget must be provided (i.e., budget for the budget periods (9 – 12 month budget for Topic 1 and one for each budget year for Topic 2, as well as a cumulative budget)) for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (which ever is less). Use the SF 424 A Excel for Non Construction Programs. These forms are found on the Applicant and Recipient Page at http://management.energy.gov/business_doe/business_forms.htm. **For each subawardee's budget (if applicable), the cost categories must include both the DOE and the subawardee cost share (if any).** Save each Subaward budget in a separate file. Use up to 10 letters of the subawardee's name (plus .xls) as the file name (e.g., ucla.xls or energyres.xls), and click on "Add Optional Other Attachment" to attach.

A budget justification (PMC 123.1) for the subaward budget is required. **For each subawardee's budget justification (if applicable), the cost categories must include both the DOE and the subawardee cost share (if any).** The SF 424A and the PMC 123.1, Budget Justification for SF 424A, are on the Applicant and Recipient Page at <https://www.eere-pmc.energy.gov/forms.aspx> and are required.

i. Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable

If a FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work

Authorization System. This order and the DOE Field Work Proposal form are available at the following link:
<http://www.management.energy.gov/documents/o4121.pdf>. Use up to 10 letters of the FFRDC name-FWP (plus .pdf) as the file name (e.g., LANL-FWP.pdf), and click on “Add Optional Other Attachment” to attach.

j. Authorization for non-DOE or DOE FFRDCs

Save the Authorization for non-DOE or DOE FFRDCs, as specified in Part III.C. Other Eligibility Requirements, in a single file named “FFRDC_Auth.pdf” and click on “Add Optional Other Attachment”

k. Project Management Plan

This plan should identify the activities/tasks to be performed, a time schedule for the accomplishment of the activities/tasks, the spending plan associated with the activities/tasks, and the expected dates for the release of outcomes. Applicants may use their own project management system to provide this information. This plan should identify any decision points and go/no-go decision criteria. Successful applicants must use this plan to report schedule and budget variances. Save this plan in a single file named “pmp.pdf” and click on “Add Attachments” in Field 11 to attach.

l. SF-LLL Disclosure of Lobbying Activities

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying." Save this document in a single file named “SF-LLL.pdf” and click on “Add Attachments” in Field 11 to attach.

Summary of Required Forms/Files
Your application must include the following documents:

Name of Document	Format	File Name
SF 424 - Application for Federal Assistance	PureEdge	See Instructions
Other Attachments Form: Attach the following files to this form:	PureEdge	See Instructions
Project Narrative File, including Letters of Commitment	PDF	Project.pdf
Project Summary/Abstract File	PDF	Summary.pdf
Resume File	PDF	Resume.pdf

Total Cost Reduction Analysis File	Excel or PDF	Cost Reduction Analysis.xls
SF 424A Excel - Budget Information for Non-Construction Programs File	Excel	SF424A.xls
Budget Justification File (PMC123.1)	PDF	BudgetJustification.pdf
Subaward Budget File(s), if applicable	Excel	See Instructions
Budget for Federally Funded Research and Development Center (FFRDC) Contractor File (DOE Field Work Proposal), if applicable.	PDF	FFRDCName-FWP.pdf
Authorization from cognizant Contracting Officer for FFRDC, if applicable.	PDF	FFRDC_Auth.pdf
Project Management Plan	PDF	PMP.pdf
SF-LLL Disclosure of Lobbying Activities, if applicable	PDF	SF-LLL.pdf

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Environmental Questionnaire

E. SUBMISSION DATES AND TIMES

Application Due Date

Applications must be received by **January 7, 2009, 11:59 PM Eastern Time**. You are encouraged to transmit your application well before the deadline. The grants.gov Helpdesk is NOT available after 9:00 PM Eastern Time. **APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

F. INTERGOVERNMENTAL REVIEW

This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. The cost principles for commercial organization are in FAR Part 31.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV, AGAINST THIS ANNOUNCEMENT, TO BE CONSIDERED FOR AWARD. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements below carefully and start the process immediately.

Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@grants.gov.

2. Registration Process Requirements

There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See http://www.grants.gov/applicants/get_registered.jsp. Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/section3/OrganizationReqCheck.pdf> to guide you through the process.

IMPORTANT: During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner identification Number" (MPIN).

Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements, as you must COMPLETE ALL STEPS of the one-time registration process before you can submit your first application through Grants.gov.

IMPORTANT NOTICE TO POTENTIAL APPLICANTS: When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have

completed the final step (i.e. Grants.gov registration).

Microsoft Vista and Office 2007 Compatibility

Grants.gov is currently incompatible with both the new Microsoft (MS) Vista Operating System and the new Microsoft (MS) Office 2007 versions of Word, Excel, and Power Point. In order to create and submit your application to Grants.gov, you must find a computer with a previous version Microsoft Operating System, such as Windows XP.

If you attach a file created using MS Office 2007, you will not get an error message when you submit the application, HOWEVER, your entire application will not be able to be processed or accepted at Grants.gov and will not reach DOE. Grants.gov can accept applications with attachments created in MS Office 2007 if the attachments are saved in the prior format.

See the http://www.grants.gov/assets/Vista_and_office_07_Compatibility.pdf for detailed instructions on how to do this. A file created in MS Office 2007 can be identified by the "x" at the end of the file extension, for example "sample.docx" for a Word file. Contact Grants.gov at 1-800-518-4726 with any questions.

3. Questions

ALL Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VII, Section A. of this announcement explains how to submit other questions to the Department of Energy (DOE), relative to the content and requirements of this announcement.

4. Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to 2 business days from application submission to receipt of email Number 2. You will know that your application has reached DOE when the AOR receives email Number 5. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five e-mails are:

Number 1 - Grants.gov Submission Receipt Number
Number 2 - Grants.gov Submission Validation Receipt for Application Number
Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number
Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number 5 - DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:
Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

5. Special Notice Regarding FedConnect

During fiscal years 2008 and 2009, the U.S. Department of Energy (DOE), will implement a new electronic procurement system. As a result, DOE will also begin using a new communications portal as a means to post notices and solicitations and to exchange award documents with awardees through the lifecycle of an award. This new system is called FedConnect. Upon implementation of the new electronic procurement system, all organizations conducting procurement activities with DOE will be required to register in FedConnect.

1. The URL for the FedConnect site is <https://www.FedConnect.net/FedConnect/>.
2. Register in FedConnect at <https://www.fedconnect.net/FedConnect/PublicUserRegistration.aspx>.
3. To become familiar with the new procurement system, there is a “quick start guide” at https://www.FedConnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.
4. Contact the helpdesk for FedConnect at support@fedconnect.net with any questions relative to registration. FedConnect requires all organizations to be registered with the CCR before registering with FedConnect. The CCR website is <http://www.ccr.gov>. Please ensure your organization’s information is up-to-date in the CCR and that the information corresponds to the information with Dun and Bradstreet <http://www.dnb.com/us/>.

In consideration of system implementation, it is highly recommended that all current financial assistance recipients and potential applicants register with FedConnect as soon as possible.

Part V - APPLICATION REVIEW INFORMATION

A. REVIEW CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement. If an application fails to meet these requirements, it may be deemed non-responsive and eliminated from full Merit Review.

2. Merit Review Criteria

Applications will be evaluated against the merit review criteria shown below. There are two different sets of Evaluation Criteria depending upon the category of the Application.

Topic 1: Evaluation Criteria will only be applied to evaluate the POC/FA applications.

Topic 2: Evaluation Criteria will only be applied to evaluate the RD&D Applications. Applications should be carefully prepared to respond to the objectives of the FOA and be responsive to the specifically-applicable evaluation criteria.

Applications must clearly identify Topic area. If an Applicant wishes to propose a project for or under both Topics, a **separate application** must be submitted for each Topic. The cost share requirement is different for each option, so each application must be clearly defined. An application combining both Topic 1 and Topic 2 will be considered non-responsive to the FOA and will NOT be considered. Applications under either Topic can have multiple focus areas.

TOPIC 1:
PROOF OF CONCEPT/ FEASIBILITY ASSESSMENT CRITERIA

Topic 1 Criterion 1:

Statement of Project Objectives

Weight: 40%

- **Technical Merit:** Quality and thoroughness of the technical description of the project and steps to achieve the technical objective with a feasible near-term impact (2-6 years). Technical project description supported by a clear explanation of current industry best practices and the future limitations the project will resolve.
- **Impact and Relevance:** Forecasted impact of the idea demonstrated by substantiated projected \$/W or LCOE reductions. Relevance demonstrated by information describing the breadth of the impact of the technology on the industry or a sector of the industry.
- **Feasibility:** Importance of critical success factors and likelihood that the project will achieve the FOA objectives.
- **Uniqueness or innovation:** Degree the proposed technology relates to the current state of the art. Degree to which the Applicant proposes a higher risk technology that goes beyond evolutionary or iterative improvements.

Topic 1 Criterion 2:

Technical Approach, Realism and Project Management Plan

Weight: 40%

- **Clear Objectives:** Clearly defined project objectives demonstrate how the applicant will address technical or cost issues in the industry. Risks and mitigation strategies defined.
- **Organization:** Project planning and organization demonstrated by a clearly-stated, well-organized, achievable and technically feasible plan. Project task plan adequately and completely addresses all elements of the technical plan. Management structure clearly defined. Management Plan addresses achieving cost and performance targets on time and within budget.
- **Verification:** Well described testing and evaluation plan, and test objectives identified, sufficient to verify progress and balanced in relationship to the overall plan.
- **Decision Points and Deliverables:** Objective evaluation of progress against the plan demonstrated by the viability, completeness, and timeliness of applicant's decision points and/or deliverables, including the appropriateness of technology transfer and commercialization decision points.

Topic 1 Criterion 3:

Qualifications, Resources and Approach to Commercialization Weight: 20%

- Relevant Experience: Demonstrated experience, qualifications, and credentials of T Team Members to address all aspects of the Application, including the Applicant's or Team Member's experience and record of success.
- Facilities: Facilities and supporting resources of the Applicant (and Team Members if applicable) are sufficient to comprehensively address all aspects of the Application.
- Commitment: Demonstrated commitment from Team Member's, including participation and/or cost share, if applicable.
- Technology Transfer: Plans for commercialization or technology transfer are feasible and sufficient to implement the project.

TOPIC 2:

RESEARCH AND DEVELOPMENT AND DEMONSTRATION PROJECTS

Topic 2 Criterion 1:

Statement of Project Objectives

Weight: 40%

- Technical Merit: Quality and thoroughness of the technical description of the project and steps to achieve the technical objective. Feasible near-term results (within 2 to 6 years.) Technical project description supported by a clear explanation of current industry best practices and the future limitations the project addresses.
- Impact and Relevance: Forecasted impact of the idea demonstrated by substantiated projected \$/W or LCOE reductions. Relevance demonstrated by information describing the breadth of the impact of the technology on the industry or a sector of the industry.
- Feasibility: Importance of critical success factors and likelihood that the project will achieve the FOA objectives.
- Uniqueness or innovation: Degree to which the Applicant proposes a higher risk technology that goes beyond evolutionary or iterative improvements.

Topic 2 Criterion 2:

Technical Approach, Realism and Project Management Plan

Weight: 40%

- Clear Objectives: Clearly defined project objectives and measures of success demonstrate how the applicant addresses specific technical or cost issues in the industry.
- Organization: Project planning and organization demonstrated by a clearly-stated, well-organized, achievable and technically feasible plan. Project task plan adequately and completely addresses all elements of the technical plan. Management Plan addresses achieving cost and performance targets on time and within budget. Management Plan structure and are clearly defined.
- Verification: Well described testing and evaluation plan, and test objectives identified, sufficient to verify progress and balanced in relationship to the overall plan.
- Decision Points and Deliverables: Objective evaluation of progress against the plan demonstrated by the viability, completeness, and timeliness of applicant's decision points and/or deliverables.

- **Business Strategy:** Quality and realism of the project demonstrated by clear risk mitigation strategies, and a sound business plan for advancing the technology, reducing the project to practice and implementing it in the industry.

Topic 2 Criterion 3:

Qualifications, Resources and Approach to Commercialization Weight: 20%

- **Relevant Experience:** Demonstrated experience, qualifications, and credentials of team members to address all aspects of the Application, including the credibility of Applicant's or Team Member's experience and record of success.
- **Facilities:** Facilities and supporting resources of the Applicant (and Team Members, if applicable) are sufficient to comprehensively address all aspects of the Application.
- **Commitment:** Demonstrated commitment from Team Member's, including participation and/or cost share, if applicable.
- **Strategic Position:** Demonstrated path to commercialization. Positioning or ability of Applicant to partner or otherwise broadly distribute their technology or ramp up production to achieve their projected impact as evidenced by previous or current experience, partners, or other supporting information.

3. Other Selection Factors

The selection official may consider the following program policy factors in the selection process:

1. Technological diversity
2. Cost Share above the minimum required
3. Leveraging of projects to maximize programmatic objectives.

B. REVIEW AND SELECTION PROCESS

a. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is at <http://www.management.energy.gov/documents/meritrev.pdf>. **It is very important that those documents (i.e., Project Abstract and Project Narrative files) that will be used during the Merit Review Process do not contain any Personally Identifiable Information as described in Appendix B.**

b. Selection

The Selection Official may consider the merit review recommendation, program policy factors, and the amount of funds available.

c. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including, but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms

and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

- DOE anticipates notifying applicants selected for award by the end of April, 2009 and making awards by the end of July, 2009

Part VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

A Notice of Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE; 4. DOE assistance regulations at 10 CFR part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; 5. National Policy Assurances to Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR part 600 (See: <http://ecfr.gpoaccess.gov>), except for grants made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at <http://management.energy.gov/documents/SpecialTermsandConditions1207.pdf>. The National Policy Assurances to be incorporated as award terms are located at http://management.energy.gov/business_doe/1374.htm.

3. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the

various types of recipients are located at http://www.gc.doe.gov/financial_assistance_awards.htm.

4. Statement of Substantial Involvement.

Either a grant or cooperative agreement may be awarded under this program announcement. If the award is a cooperative agreement, the DOE Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The proposed Checklist for this program can be found at https://www.eere-pmc.energy.gov/procurenet/FinancialAssistance/Forms/DOE_Forms/DOEF4600_2.doc.

PART VII - QUESTIONS

A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the "Submit Question" feature of the DOE Industry Interactive Procurement System (IIPS) at <http://e-center.doe.gov>. Locate the program announcement on IIPS and then click on the "Submit Question" button. Enter required information. You will receive an electronic notification that your question has been answered. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website. Potential applicants are encouraged to read all posted Q&A prior to posting a new question.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process are not answered via the DOE IIPS "submit question" feature, and must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE cannot answer these questions. (See Part IV, Section H.)

PART VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically

negotiated in a particular agreement to satisfy DOE's own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. This program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to five (5) years from the development of the information, of data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D), would apply to an award made under this announcement. This provision will identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and will also identify data that will be recognized by the parties as protected data.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

I. NOTICE OF RIGHT TO CONDUCT A REVIEW OF FINANCIAL CAPABILITY

DOE reserves the right to conduct an independent third party review of financial capability for applicants that are selected for negotiation of award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

J. NOTICE OF POTENTIAL DISCLOSURE UNDER FREEDOM OF INFORMATION ACT

Applicants should be advised that identifying information regarding all applicants, including applicant names and/or points of contact, may be subject to public disclosure under the Freedom of Information Act, whether or not such applicants are selected for negotiation of award.

REFERENCE MATERIAL

Appendix A – Definitions

“Amendment” means a revision to a Funding Opportunity Announcement

"Applicant" means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Application" means the documentation submitted in response to a Funding Opportunity Announcement. NOTE: Application is referred to as Proposal in IIPS.

“Authorized Organization Representative (AOR)” is the person with assigned privileges who is authorized to submit grant applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization’s E-Business Point of Contact designated in the CCR.

"Award" means the written documentation executed by a DOE Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be either a Grant or a Cooperative Agreement.

"Budget" means the cost expenditure plan submitted in the Application, including both the DOE contribution and the Applicant Cost Share.

"Consortium (plural consortia)" means the group of organizations or individuals that have chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Contracting Officer" means the DOE official authorized to execute Awards on behalf of DOE and who is responsible for the business management and non-program aspects of the Financial Assistance process.

"Cooperative Agreement" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between DOE and the Applicant during the performance of the contemplated activity.

"Cost Sharing" means the respective share of Total Project Costs to be contributed by the Applicant and by DOE. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus DOE Cost Shares) rather than to the DOE contribution alone.

“Central Contractor Registry (CCR)” is the primary database which collects, validates, stores and disseminates data in support of agency missions. Funding Opportunity Announcements which require application submission through Grants.gov require that the organization first be registered in the CCR at <http://www.grants.gov/CCRRegister>.

“Credential Provider” is an organization that validates the electronic identity of an individual through electronic credentials, PINS, and passwords for Grants.gov. Funding Opportunity Announcements which require application submission through Grants.gov require that the individual applying on behalf of an organization first be registered with the Credential Provider at <https://apply.grants.gov/OrcRegister>.

“Data Universal Numbering System (DUNS) Number” is a unique nine-character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the CCR. Call 1-866-705-5711 to receive one free of charge. http://www.grants.gov/applicants/request_duns_number.jsp

“E-Business Point of Contact (POC)” is the individual who is designated as the Electronic Business Point of Contact in the CCR registration. This person is the sole authority of the organization with the capability of designating or revoking an individual’s ability to submit grant applications on behalf of their organization through Grants.gov.

“E-Find” is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. <http://www.grants.gov/search/searchHome.do>

“Financial Assistance” means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and sub-awards. For DOE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

“Federally Funded Research and Development Center (FFRDC)” means a research laboratory as defined by Federal Acquisition Regulation 35.017.

“Funding Opportunity Announcement (FOA)” is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

“Grant” means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find and apply for competitive grant opportunities from all Federal grant-making agencies. Grants.gov is THE single access point for over 900 grant programs offered by the 26 Federal grant-making agencies. <http://www.grants.gov>

“Industry Interactive Procurement System (IIPS)” is DOE’s Internet-based procurement system which allows access to DOE’s business opportunities database, allows user registration and submittal of Applications: <http://e-center.doe.gov/>.

“Key Personnel” means the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

“Marketing Partner Identification Number (MPIN)” is a very important password designated by your organization when registering in CCR. The E-Business Point of Contact will need the MPIN to login to Grants.gov to assign privileges to the individual(s) authorized to submit applications on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

“Participant” for purposes of this Funding Opportunity Announcement only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the Funding Opportunity Announcement.

“Principal Investigator” refers to the technical point of contact/Project Manager for a specific project award.

“Project” means the set of activities described in an Application, State plan, or other document that is approved by DOE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

“Proposal” is the term used in IIPS meaning the documentation submitted in response to a Funding Opportunity Announcement. Also see Application.

“Recipient” means the organization, individual, or other entity that receives a Financial Assistance Award from DOE, is financially accountable for the use of any DOE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

“Selection” means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

“Selection Official” means the DOE official designated to select Applications for negotiation toward Award under a subject Funding Opportunity Announcement.

“Substantial Involvement” means involvement on the part of the Government. DOE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

“Technology Investment Agreement (TIA)” is a new type of assistance instrument for DOE, but they have been used by the Department of Defense for many years to support or stimulate research projects involving for-profit firms, especially commercial firms that do business primarily in the commercial marketplace. TIAs are different from grants and cooperative agreements in that the award terms may vary from the Government-wide standard terms (See DOE TIA regulations at 10 CFR Part 603). The primary purposes for including a TIA in the type of available award instruments are to encourage non-traditional Government contractors to participate in an R&D program and to facilitate new relationships and business practices. A TIA can be particularly useful for awards to consortia (See 10 CFR 603.225(b) and 603.515, Qualification of a consortium).

"Total Project Cost" means all the funds to complete the effort proposed by the Applicant, including DOE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

Appendix B – Personally Identifiable Information

In responding to this Announcement, Applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the following documents: Project Abstract, Project Narrative, Biographical Sketches, Budget or Budget Justification. These documents will be used by the Merit Review Committee in the review process to evaluate each application. PII is defined by the Office of Management and Budget (OMB) and DOE as:

Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual's identity, such as their name, social security number, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

1. **Public PII:** PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.
2. **Protected PII:** PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that Applicants must not include in the files listed above to be evaluated by the Merit Review Committee.

- Social Security Numbers in any form
- Place of Birth associated with an individual
- Date of Birth associated with an individual
- Mother's maiden name associated with an individual
- Biometric record associated with an individual
- Fingerprint
- Iris scan
- DNA
- Medical history information associated with an individual
- Medical conditions, including history of disease
- Metric information, e.g. weight, height, blood pressure
- Criminal history associated with an individual
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions
- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal
- Financial information associated with an individual
- Credit card numbers
- Bank account numbers
- Security clearance history or related information (not including actual clearances held)

Listed below are examples of Public PII that Applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Birthday cards
- Birthday emails
- Medical information pertaining to work status (i.e. individual A is out sick today)
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a program describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

Appendix C – Cost Share Information

Cost Sharing DOE Financial Assistance Awards

The requirement for cost sharing included in Funding Opportunity Announcements (FOAs) issued competitively by the Department of Energy (DOE) is either statutory, programmatic, or both. Certain federal statutes require a minimum cost share requirement, by either type of activities funded or by Program. This is known as statutory cost share. Research and development (R&D) activities (other than R&D activities related to basic science) require Recipients (those receiving the financial assistance awards from DOE) to cost share at a minimum of 20% of total project costs. Demonstration and Commercial Application projects require Recipients to cost share at a minimum of 50% of total project costs.

The Program may, at its discretion, require a greater level of cost share than the statutory minimum, or require cost share when there is no minimum requirement, as it determines appropriate. This is called programmatic cost share.

The program for this Funding Opportunity announcement has chosen to apply the statutory cost share requirements for Topic 1 (Proof of Concept/Feasibility Assessment) Applications of 20%. For Topic 2 Applications (Research, Development, and Demonstration), the program is requiring Recipients to cost share at a minimum of 50% cost share of total project costs.

Cost Sharing or Cost Matching

The terms “cost sharing” and “cost matching” are often used synonymously. Even the DOE Financial Assistance Regulations, 10 CFR Part 600, use both of the terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses the term “cost sharing,” as it conveys the concept that **non-federal share is calculated as a percentage of the Total Project Cost**. An exception is the State Energy Program Regulation, 10 CFR Part 420.12, State Matching Contribution. Here “cost matching” for the non-federal share is calculated as a percentage of the federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. Following is an example of how to calculate cost sharing amounts for a project with \$1,000,000 in federal funds with a minimum 20% non-federal cost sharing requirement:

Formula: Federal share (\$) divided by Federal share (%) = Total Project Cost

Example: \$1,000,000 divided by 80% = \$1,250,000

Formula: Total Project Cost (\$) minus Federal share (\$) = Non-federal share (\$)

Example: \$1,250,000 minus \$1,000,000 = \$250,000

Formula: Non-federal share (\$) divided by Total Project Cost (\$) = Non-federal share (%)

Example: \$250,000 divided by \$1,250,000 = 20%

See the sample cost share calculation for a blended cost share percentage below. **Keep in mind that FFRDC funding is DOE funding.**

What Qualifies For Cost Sharing

While it is not possible to explain what specifically qualifies for cost sharing in one or even a couple of sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under a DOE grant or cooperative agreement, then it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, then it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though are generally the same for all types of entities. The specific rules applicable to:

- Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations are found at 10 CFR600.123;
- State and Local Governments are found at 10 CFR600.224;
- For-profit Organizations are found at 10 CFR600.313.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, DOE generally does not allow pre-award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, DOE generally does not allow pre-award costs prior to the signing of the Selection Statement by the DOE Selection Official.

Following is a link to the DOE Financial Assistance Regulations. You can click on the specific section for each Code of Federal Regulations reference mentioned above.

DOE Financial Assistance Regulations:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=98a996164312e8dcf0df9c22912852b0&rgn=div5&view=text&node=10:4.0.1.3.9&idno=10>

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

(a) *Acceptable contributions.* All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the recipient's cost sharing if such contributions meet all of the following criteria:

- (1) They are verifiable from the recipient's records.
- (2) They are not included as contributions for any other federally-assisted project or program.

- (3) They are necessary and reasonable for proper and efficient accomplishment of project or program objectives.
- (4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:

(A) *For-profit organizations.* Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit costs principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are not allowable unless specifically authorized in the award document.

(B) *Other types of organizations.* Allowability of costs incurred by other types of organizations that may be subrecipients under a prime award is determined as follows:

(i) *Institutions of higher education.* Allowability is determined in accordance with OMB Circular No. A-21 -- Cost Principles for Educational Institutions

(ii) *Other nonprofit organizations.* Allowability is determined in accordance with OMB Circular A-122, Cost Principles for Non-Profit Organizations

(iii) *Hospitals.* Allowability is determined in accordance with the provisions of 45 CFR Part 74, Appendix E, Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Hospitals

(iv) *Governmental organizations.* Allowability for State, local, or federally recognized Indian tribal government is determined in accordance with OMB Circular No. A-87, Cost Principles for State, Local, and Indian Tribal Governments

- (5) They are not paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing or matching.
- (6) They are provided for in the approved budget.

(b) *Valuing and documenting contributions*

- (1) *Valuing recipient's property or services of recipient's employees.* Values are established in accordance with the applicable cost principles, which means that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:

- (A) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or
- (B) The current fair market value. If there is sufficient justification, the contracting officer may approve the use of the current fair market value of the donated

property, even if it exceeds the certified value at the time of donation to the project. The contracting officer may accept the use of any reasonable basis for determining the fair market value of the property.

- (2) *Valuing services of others' employees.* If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid. Fringe and overhead expenses on others' employee services are treated differently depending on the type of organization. No fringe or overhead is allowed for State and Local Governments, fringe and overhead are allowed for For-profit Organizations, and fringe but no overhead is allowed for Universities, Non-profits, and Hospitals.
- (3) *Valuing volunteer services.* Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.
- (4) *Valuing property donated by third parties.*
 - (A) Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.
 - (B) Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the contracting officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:
 - (i) The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.
 - (ii) The value of loaned equipment must not exceed its fair rental value.
- (5) *Documentation.* The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:
 - (A) Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.
 - (B) The basis for determining the valuation for personal services and property must be documented.

Appendix D – Sample Cumulative Budget

Applicant Name: (Complete)

Award Number: (Leave Blank)

Budget Information - Non Construction Programs

This is an example of a cumulative budget. The Grand Total Fed \$ / Non-Fed \$ on this form should also match the SF-424 Application and the Budget Justification Grand Totals.

OMB Approval No. 0348-0044

Section A - Budget Summary						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Year 1	81.087	(Leave blank)	(Leave blank)	(Enter Yr. 1 Fed \$)	(Enter Yr. 1 Non-Fed \$)	(Yr. 1 Total Fed / Non-Fed \$)
2. Year 2	81.087	(Leave blank)	(Leave blank)	(Enter Yr. 2 Fed \$)	(Enter Yr. 2 Non-Fed \$)	(Yr. 2 Total Fed / Non-Fed \$)
3. Year 3	81.087	(Leave blank)	(Leave blank)	(Enter Yr. 3 Fed \$)	(Enter Yr. 3 Non-Fed \$)	(Yr. 3 Total Fed / Non-Fed \$)
4.						
5. Totals		\$0	\$0	(Total Fed \$)	(Total Non-Fed \$)	(Grand Total Fed / Non-Fed \$)

Section B - Budget Categories					
6. Object Class Categories	Grant Program, Function or Activity				Total (5)
	(1) (Yr. 1 budget)	(2) (Yr. 2 budget)	(3) (Yr. 3 budget)	(4)	
a. Personnel	(Complete all	(Complete all	(Complete all		(Total Fed / Non-Fed \$)
b. Fringe Benefits	applicable	applicable	applicable		(Total Fed / Non-Fed \$)
c. Travel	categories for	categories for	categories for		(Total Fed / Non-Fed \$)
d. Equipment	Year 1 budget	Year 2 budget)	Year 3 budget)		(Total Fed / Non-Fed \$)
e. Supplies	All categories	All categories	All categories		(Total Fed / Non-Fed \$)
f. Contractual	must include both	must include both	must include both		(Total Fed / Non-Fed \$)
g. Construction	federal share and	federal share and	federal share and		(Total Fed / Non-Fed \$)
h. Other	applicant or	applicant or	applicant or		(Total Fed / Non-Fed \$)
i. Total Direct Charges (sum of 6a-6h)	third-party	third-party	third-party	\$0	(Total Direct Fed / Non-Fed \$)
j. Indirect Charges	cost share	cost share	cost share		(Total Fed / Non-Fed \$)
k. Totals (sum of 6i-6j)	(Yr. 1 Total Fed / Non-Fed \$)	(Yr. 2 Total Fed / Non-Fed \$)	(Yr. 3 Total Fed / Non-Fed \$)	\$0	(Grand Total Fed / Non-Fed \$)

7. Program Income					\$0
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Section C - Non-Federal Resources					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) Totals	
8. (Enter name of Applicant, if cost sharing)	(Enter \$)			(Enter Total \$)	
9. (Enter name of cost share participant)			(Enter \$)	(Enter Total \$)	
10. (Enter name of cost share participant)			(Enter \$)	(Enter Total \$)	
11. (Enter name of cost share participant)			(Enter \$)	(Enter Total \$)	
12. Total (sum of lines 8 - 11)	(Enter Total \$)	\$0	(Enter Total \$)	(Enter Total \$)	
Section D - Forecasted Cash Needs					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th quarter
13. Federal	(Enter Year 1 Fed budget)	(Enter Qtr 1 Fed budget)	(Enter Qtr 2 Fed budget)	(Enter Qtr 3 Fed budget)	(Enter Qtr 4 Fed budget)
14. Non-Federal	(Enter Year 1 Non-Fed budget)	(Enter Qtr 1 Non-Fed budget)	(Enter Qtr 2 Non-Fed budget)	(Enter Qtr 3 Non-Fed budget)	(Enter Qtr 4 Non-Fed budget)
15. Total (sum of lines 13 and 14)	\$0	(Enter \$)	(Enter \$)	(Enter \$)	(Enter \$)
Section E - Budget Estimates of Federal Funds Needed for Balance of the Project					
(a) Grant Program	Future Funding Periods (Years)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16. (May leave Section E blank, as long as information is captured as designated on page 1					
17.					
18.					
19.					
20. Total (sum of lines 16-19)	\$0	\$0	\$0	\$0	
Section F - Other Budget Information					
21. Direct Charges (Leave Blank)	22. Indirect Charges (Leave Blank)				
23. Remarks (Enter any necessary remarks)					